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EXAMINER

BERTHEAUD, PETER JOHN

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/777,627  
Filing Date: February 13, 2004  
Appellant(s): FABBRI, FABRIZIO

Jay F. Williams  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 12/17/2009 appealing from the Office action mailed 3/17/2009.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

4,618,316	ELLIOTT	10-1986
3,427,988	REDMAN et al.	3-1967
3,306,214	HAGLER	3-1964

Art Unit: 3746

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2-6 and 9-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 14 and 15, lines 3-4, it is stated, "said cylinders being provided within a single block formed as a unit together with the seats of the intake valves". However, the valve seats can be interpreted as the portions of 77 and 83 that element 75 (and the like on the discharge valve) rest upon when not open. These are clearly not part of the single block, contradicting the claims. Furthermore, there is nothing in the specification or drawings that directs the examiner to the "valve seats" that would be unitary with the block.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-4, 9-11, and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elliott 4,618,316 in view of Redman 3,427,988.

Art Unit: 3746

Elliot discloses a high pressure plunger pump comprising a cylinder, the cylinder 30 being provided with a plunger 16, is connected via a conduit and valves 36, 52 to an intake manifold 22 and to a delivery manifold 26, said cylinders being provided within a single block 20 formed as a unit together with the seat 34 of the intake valve 36, with said conduits and with said manifolds, wherein the intake valve is retained in position by a deformable element 44; and wherein the cylinder 30 communicates with the compartment containing the delivery valve via two parallel conduits (see 58, Fig. 3, and col. 4, lines 32-36). However, Elliot does not teach the following claimed limitations taught by Redman.

Redman teaches high pressure plunger pump comprising at least two in-line cylinders 19 (see col. 1, lines 56-58), each cylinder 19 being provided with a plunger 12, are connected via a conduit and valve 30 to an intake manifold (see 22) and to a delivery manifold (see 23), wherein the intake manifold (22) is positioned in front of the line of cylinders (19) and is in direct communication with the cylinders via a conduit connected to a dead compartment (see conduit inside elements 26 and 27) provided as an extension of the respective cylinder 19 and in which the intake valve 30 is located, retained in position by a deformable element 32, wherein the intake manifold and the delivery manifold are connected by at least a delivery conduit 20 having diameter smaller than the diameter of the cylinder 19. Redman further discloses that the intake manifold (see 22) has its axis coplanar with the cylinder 19 axes. Redman also discloses that the compartment containing the intake valve 30 is cylindrical and coaxial with the respective cylinder 19 (see configuration in Fig. 1).

Art Unit: 3746

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the assembly of Elliott by placing the inlet manifold in front of a line of cylinders, as taught by Redman, in order to have the horizontal passage serve as both a cylinder bore as well a suction passage and to allow the inlet and discharge manifolds to receive and distribute fluid from much different locations on the pump assembly. These modifications allow for more versatility when using the pump in various applications.

5. Claims 5, 6, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elliott 4,618,316 in view of Redman 3,427,988, and in further view of Hagler 3,306,214.

Elliott in view of Redman discloses the invention as discussed above. However, Elliott in view of Redman does not disclose the following claimed limitations taught by Hagler. Hagler teaches a pressure control apparatus including a plunger 17 contained within a cylinder, an inlet check valve 24, and a deformable means 19. Hagler further teaches that the deformable element is the valve seat sealing gasket (see col. 1, lines 63-68) and that the deformable element is an elastic plate. Hagler teaches that these aspects of the invention would be advantageous because they make the pump capable of delivering a liquid under rapidly and widely varying pressure and flow.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the pump assembly of Elliott in view of Redman by making the deformable means a sealing gasket or an elastic plate, as taught by Hagler, in order to

Art Unit: 3746

deliver a liquid under rapidly and widely varying pressure and flow (see col.1, lines 14-22).

### **(10) Response to Argument**

In response to Appellant's arguments with respect to the rejections under 35 U.S.C. 112, second paragraph:

Appellant states that when the word "valve" is used it means the whole valve or "valve assembly", not merely the moveable part of the valve or the valve member. Examiner agrees that this interpretation is completely reasonable and has interpreted the valve in this way with respect to how it was rejected by the prior art. However, due to the common interpretation in the art that a valve seat typically seats a moveable member of a valve assembly, and the lack of clarification in the claim or specification of what the valve seat actually consists of, the 112 rejection is warranted.

At no point in the specification are the intake valve seats explicitly mentioned. In the current Appeal Brief, Appellant states that "the specification and drawings describe the valve seats as a unitary block" (page 7). This is simply not true. There is no mention of the terms "unitary" or "valve seat" in the specification, and there is certainly no description stating that the intake valve seats are portions of this unitary block. Now in the drawings it can be seen that the inlet valve assemblies are enclosed in a unitary block; yet, there are no reference numerals pointing out the "valve seats". In fact, the only mention of a "seat" with respect to the intake valves is on page 5 of the specification where it is stated, "*The intake valve 74 comprises a disc 75 maintained in position by the spring 76; the entire assembly is contained in a known cage 77 which*

Art Unit: 3746

*maintains the disc sealing seat in position in accordance with a known construction."*

Therefore, the interpretation that the valve seat is typically responsible for seating the moveable member in a valve assembly, which is the common interpretation in the art, is even enforced in the Applicant's original disclosure. Thus, Examiner asking for clarification of the claim language, and thereby rejecting claims 2-6 and 9-15 under 35 U.S.C. 112 second paragraph, is reasonable and proper.

In response to Appellant's arguments with respect to the combination of Elliott in view of Redman:

Appellant argues that neither Elliott nor Redman teach "the cylinders being provided within a single block formed as a unit together with the seats of the intake valves, with said conduits and with said manifolds." Examiner respectfully disagrees. Elliott primarily teaches this limitation. It is clearly shown in figure 1 of Elliott that the cylinder 30 is provided in the same block 20 as the valve seat 34 (under the interpretation given by the Appellant) of the intake valve 36, the conduits and the manifolds 22, 26. Redman is responsible for teaching the at least two in-line cylinders 19 (see col. 1, lines 56-58). Therefore, the combination of Elliot in view of Redman indeed teaches cylinders being provided within a single block formed as a unit together with the seats of the intake valves, with said conduits and with said manifolds.

Appellant goes on to argue that modifying Elliott with Redman by placing the inlet manifold in front of the cylinder is improper and that there is "no reason to do so." Examiner respectfully disagrees. As stated in the above rejection, one reason to do so would be to allow the inlet and discharge manifolds to receive and distribute fluid from



Art Unit: 3746

much different locations on the pump assembly. This modification would allow for more versatility when using the pump in various applications. Furthermore, because the lead reference Elliott teaches the single block limitation, the crux of the invention, Redman's modifications are merely simple substitutions of one known element for another. Where a claimed improvement on a device or apparatus is no more than "the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for improvement," the claim is unpatentable under 35 U.S.C. 103(a). *Ex Parte Smith*, 83 USPQ.2d 1509, 1518-19 (BPAI, 2007) (citing *KSR v. Teleflex*, 127 S.Ct. 1727, 1740, 82 USPQ2d 1385, 1396 (2007)). Accordingly, Appellant claims a combination that only unites old elements with no change in the respective functions of those old elements, and the combination of those elements yields predictable results; absent evidence that the modifications necessary to effect the combination of elements is uniquely challenging or difficult for one of ordinary skill in the art, the claim is unpatentable as obvious under 35 U.S.C. 103(a). *Ex Parte Smith*, 83 USPQ.2d at 1518-19 (BPAI, 2007) (citing *KSR*, 127 S.Ct. at 1740, 82 USPQ2d at 1396).

Appellant also argues that the modification could not be achieved because of various reconstruction problems. Examiner points out that it is not necessary that the inventions of the references be physically combinable to render obvious the invention under review. *In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983). "The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the

Art Unit: 3746

test is what the combined teachings of the references would have suggested to those of ordinary skill in the art." In re Keller, 642 F.2d 413,425 (CCPA 1981) (citation omitted).

Finally, Appellant argues that "in Redman, there are seven separated parts that would need to be unified in a single block, but this is impossible because forming these parts as a unit in a single block would make it impossible to assemble the pump." However, the limitation regarding the single block has already been taught by Elliott. The elements in the Redman reference do not have to be able to be unified because Elliott is not modifying Redman. Redman is being used to modify Elliott. Redman's modifications have nothing to do with forming the single block.

In conclusion, Appellant has argued that the combination of Elliott in view of Redman is improper. However, since the Appellant has submitted no persuasive evidence that the combination of the above elements is uniquely challenging or difficult for one of ordinary skill in the art, the claim is unpatentable as obvious under 35 U.S.C. 103(a) because it is no more than the predictable use of prior art elements according to their established functions resulting in the simple substitution of one known element for another. The structural modifications made to Elliot in view of Redman are indeed simple substitutions which yield predictable results.

In response to Appellant's arguments that the combination of Elliott in view of Redman does not teach various features of the claims:

Appellant argues that the references do not teach that "the intake valve assembly is located in the inlet conduit and is retained in position by a deformable element."

Examiner would like to first point out that the Appellant is arguing more than is claimed.

Art Unit: 3746

The term "intake valve assembly" is not used in the claim, and as was discussed above, the clarity of the claim with respect to the "intake valve," and what is defined by that term, is very much in question. Secondly, the limitation "retained in position by a deformable element" is placed between two commas in both claims 14 and 15 and almost seems to be sitting by itself. The punctuation of these claims in general makes it very hard to discern what element is actually being "retained" by this deformable element. This portion of the claim probably should have been pointed out as being indefinite as well. Nevertheless, even if it was clear that the deformable element retains the "intake valve", the indefiniteness of the prior portion of the claim allows for a very broad interpretation of the limitation. For the purposes of the prior art rejections the Examiner has interpreted the "intake valve" just as the Appellant has, as the "valve assembly". This allows element 34 in Elliott to be the "valve seat" formed as a unit with the single block. When it comes to the deformable element limitation, the Examiner relies on the spring 44 which retains the moveable valve member 40 in position. This is broadly true because the moveable member 40 is a portion of the intake valve and it is being retained by a deformable element. Therefore, since the structure of Elliott broadly reads on the limitations, and because the intake valve and the "retained in position by a deformable element" limitations have not been properly defined in the claim, the claim limitations have been met as best as they have been understood by the Examiner.

Appellant also argues that the references do not teach a delivery conduit having a smaller diameter than the diameter of cylinder. Examiner respectfully disagrees. As

Art Unit: 3746

clearly seen in Fig. 1 of Redman, conduit 20 is noticeably narrower in diameter than 19.

Therefore, Redman teaches the limitation.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Peter J Bertheaud/

Examiner, Art Unit 3746

Conferees:

/Devon C Kramer/

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